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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/723,813	11/28/2000	Yasuharu Asano	450100-02862	6411

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EXAMINER

SKED, MATTHEW J

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/723,813

Applicant(s)

ASANO ET AL.

Examiner

Matthew J. Sked

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5 and 8-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5 and 8-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. The claims were objected to because of the misuse of the term "voice recognition" for what nowadays is called --speech recognition--. The Applicant argues that the term "voice" is intended to include more than just "speech" such as the identification of the speaker and recognition of words and sounds. The Applicant cites pages 23-25 and Fig. 8 as support for this claim. The Examiner respectfully disagrees. Figure 8 and pages 23-25 of the specification are drawn to a voice (speech) recognition system that performs an A/D conversion on the input (21), extracts characteristics from the speech such as Mel Cepstrum Coefficients, LPC's, power, pitch information, etc. (page 24, lines 3-19), and then the matching unit performs recognition using the extracted characteristics based on HMM, acoustic models, dictionaries and grammars (page 24, line 20 to page 25, line 25). Nowhere is the term "voice recognition" defined as the identification the individual speaker, recognition of meanings and recognition of sounds. Additionally, the specification fails to exhibit any support for the identification of the speaker such as comparing the processed speech information to specific user voice templates. For at least these reasons the objection to the claims is proper and the objection stands.
2. Applicant's arguments with respect to claims 1, 3-5 and 8-11 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

The disclosure and claims are objected to because the term "voice recognition" is misused for what nowadays is called --**speech recognition**-- in the speech signal processing art. While "voice recognition" and "speech recognition" were both once used interchangeably to refer to spoken word recognition, nowadays these two terms are distinguished. The term "**voice** recognition" now denotes identification of **who** is doing the speaking (class 704/246), while "**speech** recognition" (or "**word** recognition") denotes identification of **what** is being said (class 704/251). So, appropriate correction to the proper terms of art is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-5 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya et al. (U.S. Pat. 6,629,242) in view of Petrushin (U.S. Pat. 2002/0194002A1).

As per claims 1, 10 and 11, Kamiya teaches a speech processing device, method and recording medium executing a program built into a robot (col. 3, lines 63-67), comprising:

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control means for controlling speech processing by said speech processing means (neural network used to determine the emotion from the speech is adapted, col. 8, lines 34-60 and robot's speech is adapted, col. 10, line 66 to col. 11, line 4), based on a state of said robot; wherein the state is determined by an action, an emotion state and an instinct state of the robot (adaptation of the neural network is subjected to an evaluation of a decided action (instinct) that is based on its current emotion state and how this action is judged by the user, col. 8, lines 34-60);

wherein said emotion and instinct states are determined on the basis of values corresponding to a plurality of states of an emotion model and an instinct model, respectively; wherein the value corresponding to each state within the emotion model and within the instinct model are linked to a mutually stimulating manner (relationships exist between emotional model and corresponding patterns of behavior, col. 11, lines 8-23);

wherein said voice processing means comprises voice recognizing means for recognizing the voice input (sound/voice detection unit, col. 6, lines 9-15); and

wherein said robot takes actions corresponding to a reliability of the voice recognition results output from said voice recognizing means, or the emotion state of said robot is changed based on said reliability (performs speech recognition which would inherently have an acoustic model that would choose the corresponding meaning with the highest probability hence the most reliable, col. 6, lines 9-15).

Kamiya does not specifically teach the speech processing means for processing a speech input including extracting control pitch information or phonemics information and changing the state based on this information.

Petrushin teaches a system for detecting emotion in speech that extracts the pitch from the incoming speech to classify the emotion of the speaker (paragraph 42).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Kamiya to extract control pitch information and change the state based on this information because, as taught by Petrushin, pitch is the main vocal cue for emotion recognition (paragraph 48).

5. As per claim 3, Kamiya teaches wherein said voice processing means comprises voice synthesizing means for performing voice synthesizing processing and outputting synthesized sound (outputs sounds or responses, col. 10, line 66 to col. 11, line 4);

and wherein said control means control the voice synthesizing processing by said voice synthesizing means, based on the state of said robot (outputs the voice suitable for the current pseudoemotion, col. 10, line 66 to col. 11, line 4).

6. As per claim 4, Kamiya teaches wherein said control means control phonemics information and pitch information output by said voice synthesizing means (synthesizes and answer hence each answer would have different phonemes and because pitch is the main vocal cue in emotion the voice for the current pseudoemotion would have a controlled pitch, col. 10, line 66 to col. 11, line 4).

7. As per claim 5, Kamiya teaches wherein said control means control the speech speed or volume of synthesized sound output by said voice synthesizing means

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(outputs the voice suitable for the current pseudoemotion wherein speech of different emotions would inherently have different speeds and volumes, col. 10, line 66 to col. 11, line 4).

8. As per claim 8, Kamiya teaches wherein said control means recognizes the action which said robot is taking, and controls voice processing by said voice processing means based on the load regarding that action (stores relationships between emotion and behavior and outputs speech in regard to the current emotion, col. 10, line 66 to col. 11, line 23).

9. As per claim 9, Kamiya teaches wherein said robot takes actions corresponding to resources which can be appropriated to voice processing by said voice processing means (inherently would retrieve phonetic information to synthesize the speech, col. 10, line 66 to col. 11, line 4)

Conclusion

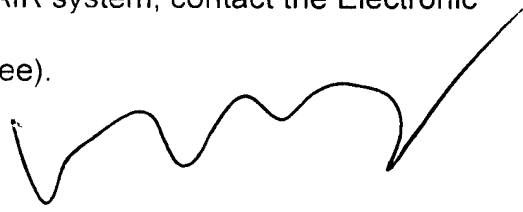
10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gabai et al. (U.S. Pat. 6,160,986) and Wang (U.S. Pat. 6,192,215) teach toys that contain speech recognition for interaction. Fujimura et al. (U.S. Pat. 6,792,406), filed after the current application, teaches using emotion in speech to control an interactive electronic pet that is suggested to be used in a mechanical pet.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Sked whose telephone number is (571) 272-7627. The examiner can normally be reached on Mon-Fri (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'W. R. Young', with a long, sweeping horizontal line extending to the right.

**W. R. YOUNG
PRIMARY EXAMINER**

MS
9/28/05